Bachelor of Science in Mechanical Engineering- Metallurgy concentration
Study Plan (Fall Start)

Total Credit Hours: 138

First Year (Freshman)

Semester 1

Code	Title	Cr.	Prerequisite
ARL 101(A)	Communication Skills in Arabic	3	Nil
ENG 200	English II	3	IELTS average score of 6 or EMSAT average score of 1400 or passing grade in ENG 102 (FWS100(E)/ USS001 as co-req if placed in ENG200)
STT 100	General Statistics	3	Nil
MTT 102	Calculus I	3	Math Placement Test or MTT101 (C grade)
MEC 130	Introduction to Mechanical & Industrial Engineering	2	Nil
ISL 100	Islamic Culture	3	nil
	Total Credit Hours	**17**	

Semester 2

Code	Title	Cr.	Prerequisite
GEN 101	Introductory Artificial Intelligence	3	STT 100
FWS 205	UAE and GCC Society	3	ENG102 (P) & FWS100 (E)/ USS001 as pre-requisite FWS100(E)/ USS001 as co-requisite if students enter to ENG200 directly
MEC 330	Computer Aided Drawing	2	MEC 130
PHY 102	Physics and Engineering Applications I	3	MTT 102
PHY 102 L	Physics and Engineering Applications I Lab	1	MTT 102+PHY 102 (co-req)
MTT 200	Calculus II	3	MTT 102
	Total Credit Hours	**15**	

Second Year (Sophomore)

Semester 3

Code	Title	Cr.	Prerequisite
GEN 200	Engineering Economy	2	ENG 200 + MTT 102(Co-req)
MTT 201	Calculus III	3	MTT 200
CSC 201	Structured Programming	3	MTT 101 or Higher
PHY 201	Physics and Engineering Applications II	3	PHY 102
PHY 201 L	Physics and Engineering Applications II Lab	1	PHY102+PHY201(co-req)
CHE 205	General Chemistry I	3	(Co-req) ENG102 / ENG 200
CHE 201 L	Chemistry Lab	1	(Co-req) CHE205
	Total Credit Hours	**16**	

Semester 4

Code	Title	Cr.	Prerequisite
CIV 201	Statics	3	PHY102
MEC 300	Materials Science	3	CHE 205
MEC 320	Thermodynamics I	3	PHY 102
MEC 390	Electromechanical Devices	3	PHY 201
MTT 204	Introduction to Linear Algebra	3	MTT 200
MTT 205	Differential Equations	3	MTT 200 + MTT 204 (co-requisite)
	Total Credit Hours	**18**	

Third Year (Junior)

Semester 5

Code	Title	Cr.	Prerequisite
MEC 302	Mechanics of Materials	3	CIV 201, MEC 300
MEC 350	Fluid Mechanics	3	CIV 201, MTT205
MEC 351	Fluid Mechanics Lab	1	MEC 350 (co-req)
MEC 321	Thermodynamics II	3	MEC 320
MEC 310	Dynamics	3	CIV 201, MTT204
MEC 340	Machine Design I	3	MEC 330, MEC 300
	Total Credit Hours	**16**	

Semester 6

Code	Title	Cr.	Prerequisite
MEC 430	Machine Design II	3	MEC 302, MEC 340
MEC 432	Design and Manufacturing Lab	1	MEC 301 (co-req)
MEC 411	Kinematic and Dynamics of Machinery	3	MEC 310
MEC 410	Control Systems	3	MEC 310, MEC 390
MEC 412	Dynamics and Control Systems Lab	1	MEC 410 (co-req)
MEC 301	Manufacturing Processes	3	MEC 300
FWS 310	Fundamentals of Innovation & Entrepreneurship	3	ENG200 + Completion of 60chr
	Total Credit Hours	**17**	

Summer Semester

Code	Title	Cr.	Prerequisite
MEC 399i	Internship	3	90 Credit Hours

Fourth Year (Senior)

Semester 7

Code	Title	Cr.	Prerequisite
MEC 480	Mechanical Vibration	3	MEC 410
MEC 420	Heat Transfer	3	MEC 320, MEC 350
MEC 421	Thermal Engineering Lab	1	MEC 420 (co-req)
MEC465	Numerical & FE Simulation Eng Problems	3	MEC430,MEC420 Co-Req
MEC 482	Introduction to Mechatronics	3	MEC390, MEC 410 (co-req)
MEC 475	Microstructure Engineering	3	MEC 300, MEC 301
MEC 498	Capstone Design Project I	1	MEC 465 (co-req)
GEN 400	Engineering Ethics	1	Senior level
	Total Credit Hours	**18**	

Semester 8

Code	Title	Cr.	Prerequisite
MEC 499	Capstone Design Project II	3	MEC 498, Senior level (120 credits)
MEC 477	Corrosion & Degradation of Metals	3	MEC 300, MEC 320
MEC 474	Fracture and Fatigue	3	MEC 430, MEC 465 (Co-req)
MEC 476	Heat Treatment & Surface Hardening	3	MEC 301, MEC 475
MEC 478	Phase Transformation	3	MEC 300, MEC 320, MEC 475
MEC 463	Turbomachinery	3	MEC420
	Total Credits Hours	***18***	